

Albanian Male Students Perception and Knowledge of Human Papillomavirus (HPV)

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Abstract

The women and men are vulnerable to HPV infections as one of the diseases with the highest incidence of cancer in the world, it's important to know the level of knowledge they have about HPV infection and vaccination. The aim of this study was to evaluate knowledge around the Human papillomavirus (HPV) and what can be caused by this, in a group of students which consist only in Albanian men its relationship with genital warts and different type of cancers and HPV vaccine. We conducted a questionnaire survey of 160 male students in the Faculty of Natural Sciences, University of Tirana, Albania. The questionnaire showed that only one third of the students had heard about HPV infection and 45.28% of them had heard about protective vaccination. Between the two groups divided into two age groups: 18-21 years and 22-25 years, significant differences were observed only in the knowledge scores ($p = 0.00$), while in the sensitivity scores ($p = 0.753$) and seriousness ($p = 0.13$) no differences were observed between the two groups. In conclusion, we must say that we need to increase the contribution in education for the recognition and treatment of the concept of HPV and related diseases in the university system, in order to prepare conscious generations for the great importance of HPV infection prevention and vaccination.

Keywords: HPV infection, knowledge, vaccine, male students

1. Introduction

Human papillomavirus (HPV) infections are the most common sexually transmitted infections in both sexes and are the major causes of infection-related cancer worldwide (Moreira et al., 2014; Bosch et al., 2012). Approximately, 80% of sexually active individuals will be infected by HPV during their lifetime and it can cause anogenital warts and lead to cancers of the oral cavity, pharynx, anus, and genitals in both sexes (Giuliano et al., 2016).

In men, genital warts most often appear on the penis, on the scrotum, in or around the anus, or on the groin. It can be challenging to diagnose HPV in men because the virus doesn't always show symptoms, especially in cases where it can alter cellular structure. The diagnosis of HPV in men is made when external genital warts are seen. Since there is no treatment for HPV that has no symptoms, most men with the infection are not treated. In Europe are reported 2.700 cases of penile cancer, 2.700 cases of anal cancer and 11.000 cases of head and neck cancer in males per year (de Martel et al., 2017). The most common risk associated with detection of HPV in the anogenital area in heterosexual men is the number of lifetime sexual partners (Palefsky & Rubin 2009).

Males are linked to the transmission of HPV and are vulnerable to infection-related complications themselves, for this reason they should be vaccinated. Vaccination against HPV infection has been recognized as an effective primary intervention for preventing penile precancers and for reducing the burden of HPV related diseases in men. Some countries have introduced the HPV vaccination into their national immunization programmes for boys at 11 or 12 years of age, with catch-up vaccinations up to the age of 26. Currently, there are three licenced HPV vaccines in the European Union (EU) approved by the European Medicines Agency: Cervarix (GlaxoSmithKline), a two-valent vaccine targeting HPV16 and 18, the most carcinogenic types (Cervarix 2009); Gardasil (Merck Inc.), a four-valent vaccine targeting HPV16/18 and also low-risk types HPV6 and 11 that cause genital warts (Garadtil 2009); and Gardasil 9 (Merck Inc.), a nine-valent vaccine targeting HPV6/11/16/18 and the next five most carcinogenic types (HPV31/33/45/52/58) (Garadtil-9 2015). the HPV vaccination has not been included in the national immunisation programme for boys, in Albania. According to Albanian Ministry of Health data, only the HPV Cervarix vaccine is imported according to the current register of drugs registered in the Republic of Albania (AKBPM 2023).

University male students are a group at risk of HPV; they have a greater risk of contracting sexually transmitted infections than the general population because of the high-risk sexual behaviors in which they engage (Katz et al., 2011). Levels of awareness and education are important prerequisites for efforts aimed at preventing the spread of HPV. Education on sexually transmitted diseases might be an effective primary prevention strategy for HPV infection. Thus, this population would be more likely to retain information from an HPV-focused intervention and have a stronger motivation to improve their safe-sex practices. The present investigation aims at providing information on awareness among male Albanian students of age 18–25 years of HPV and its relationship with genital warts and cancers. The study employed a cross-sectional descriptive research design.

2. Materials and methods

In the present investigation, we conducted a questionnaire survey with 160 male students of ages 18–25 in the Faculty of Natural Sciences, University of Tirana, in January-February 2020. Once permission from a lecturer in each class and approval from the students were obtained, the questionnaire was undertaken. No information on HPV or on genital warts and cancers had been previously reported to the students. The questionnaires were distributed in a lecture hall, and 10–15 minutes were required to fill them in. The questionnaire consisted of two parts: the first obtained information on age, being circumcised, place of permanent residence, number of sexual partners, smoking history and condom use, while the second obtained information on awareness of HPV, genital warts and cancers, vaccines and risk factors.

In the 11 multiple-choice questions where the student would be tested on knowledge about HPV and the diseases caused by it, they had to choose only one correct alternative.

The number of correct data points gives the score on knowledge about HPV and its diseases, ranging from 0 (minimum) to 11 (maximum) for each student. Based on the HBM (Health Belief Model) model, 17 questions are related to the response to the perception of HPV diseases and their causes. The 17 questions on the perception of sensitivity and seriousness to HPV and the diseases caused by it are evaluated on a 5-point scale starting from very much to not at all (very much has 1 point to not at all has 5 points). In the 8 questions on sensitivity, the scores range from 8 (minimum) to 40 (maximum) for each student, and in the 9 questions on seriousness, the scores range from 9 (minimum) to 45 (maximum) for each student. The questionnaire used is a research tool to investigate students' knowledge about HPV and the diseases it causes, and it is adapted for Albanian students from the model used by Sherman & Nailer (2018).

According to the analysis, the data were stratified into two age groups: the first group (18-21) year, which corresponds to the first study cycle, and the second group (22-25) years, which corresponds to the second study cycle, and subsequent comparisons were carried out using cross-tabulated data. SPSS (Statistical Package for Social Sciences) version 16 for Windows was used for data processing. Differences between groups were evaluated by chi-square tests, and the estimates were carried out using odds ratios (we accept a significant result for a p -value < 0.05).

3. Results

One hundred sixty male students from 18 to 25 years old completed our questionnaire, and the mean (SD) age was 20.6 years (1.6). Table 1 shows some of the general characteristics of the students. Out of 160 male students, only 53 (33.13%) reported having heard about HPV infections. The majority (75%) reported that they had experienced sex, but only 37 (30.8%) of them had heard about HPV infections. Approximately half (51%) had received the information from the internet, 32% from school, and the rest from written media, TV, radio, and from parents. 89% thought that sexual activity was associated with HPV infection transmission. 51% recognise HPV as the main cause of anogenital warts. Only 24 out of 53 (45.28%) had heard about protective vaccination, and all of them desired to have the vaccine. 92% knew that HPV can infect both females and men and 52.8% knew that HPV may not show symptoms. The most widely known risk factor was 'association with other sexually transmitted infections' (86.9%), followed by 'multiple sex partners' (71.9%), 'smoking' (43.1%), 'sexual intercourse before age 18' (33.8%), and only 22.5% for 'uncircumcised'.

Students also responded to 5 Likert type questions that assessed their susceptibility to becoming infected with HPV. Responses were measured on a 5-point scale ranging from strongly agree to strongly disagree. Table 2 provides details of frequencies and percentages for responses on susceptibility and assessing the severity of the HPV problem. Results indicated that 32.08% of respondents for the question that if they get vaccinated, they can't be infected with HPV and 47.17% for the question that the chance of getting HPV is high have chosen to be 'neutral'. 30.19% strongly agreed that practicing unprotected sex put them at risk of contacting HPV.

Table 1. General characteristics.

Characteristic	n	%
Age (years)		
18	12	7.50
19	34	21.25
20	36	22.50
21	38	23.75
22	19	11.88
23	13	8.13
24	3	1.88
25	5	3.13
Religion		
Muslim	110	68.75
Orthodox	33	20.63
Catholic	9	5.63
Other	8	5.00
Smoking		
Yes	103	64.38
No	57	35.63
Circumcision		
Cicumcised	96	60.00
Not circumcised	64	40.00
Sexual intercourse		
Yes	120	75.00
No	40	25.00
Condom use		
Yes	99	82.50
No	21	17.50

In addition, nearly half either strongly agree (41.51%) or agree (9.43%) that they are worried about the possibility of having genital warts. Regarding sensitivity, the average score for all students was 24 out of a possible 40, with a standard deviation of 5.96 points. Regarding the assessment of the perception of the seriousness (importance) of knowing this problem, the average score was 26.73 out of 45 possible, with a standard deviation of 6.63 points.

Table 2. Frequencies of responses to questions on susceptibility and on the severity of the problem.

Question	SA (%)	A (%)	NA (%)	D (%)	SD (%)	
Questions on susceptibility	If I get the vaccine, I can't get infected.	15.09	7.55	32.08	26.42	18.87
	The chance of getting HPV is high.	7.55	9.43	47.17	16.98	18.87
	I am worried about the possibility of having penile cancer.	28.30	5.66	20.75	15.09	30.19
	I am worried about the possibility of having genital warts.	41.51	9.43	7.55	9.43	32.08
	All men have an equal chance of HPV infection.	20.75	18.87	33.96	13.21	13.21
	I worry about the possibility of getting HPV infection.	26.42	7.55	24.53	18.87	22.64
	I can avoid HPV infection.	18.87	30.19	26.42	11.32	13.21
	Practicing unprotected sex increases the chance of getting	30.19	18.87	13.21	16.98	20.75
	Genital warts can be a serious problem for me	24.4	16.3	34.4	8.8	16.3
	Penile cancer can be a serious health problem for me	44.4	10.0	12.5	14.0	19.4
Questions on the severity of the problem	People who are infected with HPV should not worry about their health	28.1	9.4	19.4	17.0	26.3
	HPV increases the risk of penile cancer	26.9	20.0	29.4	15.0	8.8
	If I was infected with HPV, I would keep it a secret by not telling others	22.5	12.0	23.8	19.0	23.0
	If I were infected with HPV, I would tell others about the risk of infection	25.6	19.0	20.6	23.0	11.0
	If I were infected with HPV society would reject me	11.3	10.0	24.4	21.0	34.0
	If I were infected with HPV, I would feel more lonely than usual	13.8	17.0	31.3	21.0	17.0
	People die from HPV infection	12.5	16.0	38.1	21.0	13.0

The Pearson correlation coefficient (r) was used to look at the correlation between the points of knowledge, sensitivity, and severity of HPV. From the data analysis in Table 3, a significant correlation was observed between sensitivity and severity ($r = 0.980$, $p = 0.00$), while between knowledge and sensitivity ($r = -0.133$, $p = 0.093$) and between sensitivity and severity

($r = -0.149$, $p = 0.060$), no significant correlation was observed for all students included in the study.

Table 3. Correlation between points of knowledge, sensitivity, and severity.

Variable	Knowledges	Sensibility	Severity
Knowledges		-.133 ns	-.149ns
Sensibility			.980**
Severity			

** $p < 0.001$; ns $p > 0.5$

To see the relationship between age and knowledge about HPV, we divided it into two age groups (18-21 years; 22-25 years), which also coincides with the grouping of students according to study cycles (Bachelor and Master study). As shown in Table 4, there is a significant relationship between age and knowledge about the way the virus is transmitted ($p = 0.011$), proving that students aged 22-25 have heard more about the way HPV is transmitted compared to students aged 18-21.

Table 4. Frequencies of answers for the main knowledge about HPV by age group.

Question	Group I (N=120)	Group II (N=40)	Total	p
HPV is sexually transmitted	97 (80.83)	39 (97.5)	136 (80)	0.011* ($\chi^2 = 6.536$)
HPV may not cause symptoms	61 (50.83)	22 (55)	83 (51.88)	0.583 ($\chi^2 = 0.302$)
The HPV vaccine can be given at any age	75 (62.5)	27 (67.5)	102 (63.75)	0.251 ($\chi^2 = 1.319$)
Men cannot be tested for HPV	104 (86.67)	36 (90)	140 (87.5)	0.581 ($\chi^2 = 0.305$)
The vaccine can only be given to sexually active men	61 (50.83)	20 (50)	81 (50.63)	0.927 ($\chi^2 = 0.008$)
HPV cannot cause genital warts	33 (27.5)	12 (30)	45 (28.13)	0.761 ($\chi^2 = 0.093$)

* $p < 0.05$

In table 5, are given the frequencies of responses to risk factors from students by age group. Logistic regression analysis was used to compare the knowledge of risk factors between the two groups. As the first group, we have placed the students in the age group of 18-21 years, and the second group of students in the age group of 22-25 years.

The estimates show that compared with students aged 22-25 years, students aged 18-21 years were more likely to have heard of the risk factor 'multiple sexual partners', OR = 9.791; 95% CI = 3.978-24.097. On the other hand, students aged 22-25 years were more likely to have heard of the risk factor 'circumcision, OR = 0.062; 95% CI = 0.008-0.471, compared with students aged 18-21 years.

Table 5. Frequencies of responses to risk factors by age group.

Risk factors	Group I (%)	Group II (%)	Total (%)	OR (95% CI) Group I vs. Group II	p
Numerous sexual partners					
No	39(32.5)	7(17.5)	46(28.75)	1 (Reference)	
Yes	81(67.5)	33(82.5)	114(71.25)	9.791 (3.978-24.097)	0.000***
Sexual intercourse before the age of 18 years					
No	76 (63)	29 (72.5)	105(65.6)	1 (Reference)	
Yes	44(37)	11(27.5)	55(34.4)	0.655 (0.298-1.439)	0.290
Infection with other sexually transmitted diseases					
No	21(17.5)	0(0)	21(13.1)	1 (Reference)	
Yes	99(82.5)	40(100)	139(86.9)	0.825 (0.760-0.896)	0.005
Smoking					
No	70(58.3)	21(52.5)	91(56.9)	1 (Reference)	
Yes	50(41.7)	19(47.5)	69(43.1)	1.267(0.617-2.599)	0.519
Circumcision					
No	85(70.8)	39(97.5)	124(77.5)	1 (Reference)	
Yes	35(29.2)	1(2.5)	36(22.5)	0.062(0.008-0.471)	0.000***

*** p<0.001

To see the differences between the two groups on knowledge, sensitivity, and seriousness about HPV, was used the t-test (Paired Samples T-Test). No significant differences were observed in the knowledge scores (p = 0.192), sensitivity scores (p = 0.183) and seriousness scores (p = 0.199) between the two groups.

4. Discussion

The results obtained showed low levels of knowledge of HPV infections, with only 33.13 percent in male students. Several factors could contribute to poor awareness of HPV infections among Albanian students, including limited sex education, cultural taboos around discussing sexual health, or insufficient public health campaigns. Understanding the specific reasons requires a comprehensive study to identify gaps in education and communication about sexual health in the context of Albanian culture and educational practices. The level of knowledge is lower than that obtained in 14-24 year old males in Italy, where 54.9% reported having heard about HPV (Napolitano et al., 2016), but higher than those obtained in 18 to 25 year old students in Germany, where only 13.9% knew that HPV infection is sexually transmitted and <1.5% knew that HPV infects women and men (Blödt et al., 2012); in a group aged 18-24 in Singapore, only 15.2% had ever heard of HPV (Donahue et al., 2014); and in

the United Arab Emirates 31% of university students had not heard of HPV infection before (Ortashi et al., 2013).

Sources of information about HPV may play an important role in shaping sexual health decision-making strategies and perceptions of responsibility. Emphasis on preventing genital warts, other STIs, and HPV-related cancers found in males may increase the acceptability and responsibility of HPV prevention measures among males (Hodge 2014).

In a study conducted in Turkey, a significant relationship was observed between age and knowledge about HPV ($p < 0.01$), where with increasing age, the chance to hear more about HPV and the diseases caused by it increases (Cinar et al., 2019).

Encouraging and improving vaccination coverage is critical for reducing the burden of disease and cancer related to HPV. In order to do this, it is necessary to understand what targeted individuals perceive to be the benefits of vaccination and the barriers to becoming vaccinated (Bosch et al., 2013).

5. Conclusion

Our survey indicates that male students have poor knowledge of HPV and HPV vaccination. Their low perception of the risk of HPV infection is likely due to a lack of knowledge regarding the transmission, health consequences, and ways to prevent HPV infection. Though it may be difficult to generalize from this study due to the relatively small sample size, some implications for public health practice can be suggested. Education is needed, not only for the students who are not yet sexually active but also for those who are. Since there is no national strategy for vaccination of males with the HPV vaccine, further research on Albanian male students is needed to explain the variations in HPV knowledge and create appropriate health education programs. STD education can be an effective primary prevention strategy for HPV infection. Some of the reasons for undertaking this study were the importance of the problem, the lack of such a study among male students in our country, and the positive desire to help male students in this regard.

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Conflict of interests

The authors have no conflict of interest to declare.

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